STATE OF ILLINOIS
BEFORE THE ILLINOIS COMMERCE COMMISSION

Investigation of the propriety of the rates, terms, and conditions related to the provision of the Basic COPTS Port and the COPTS-Coin Line Port.	))))	Docket No. 01-0609

DIRECT TESTIMONY

OF

MICHAEL STARKEY

On behalf of

Payphone Services, Inc.
DataNet Systems, LLC
~~**Illinois Public Telecommunications Association**~~
TruComm Corporation

July 26, 2002

PUBLIC VERSION

Information which Ameritech Illinois has identified as "Confidential" is highlighted in the following manner **__**

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Payphone Coalition
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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS FOR THE RECORD.

A. My name is Michael Starkey. My business address is QSI Consulting, Inc., 703 Cardinal Street, Jefferson City, Missouri 65101-3748.

Q. WHAT IS QSI CONSULTING, INC. AND WHAT IS YOUR POSITION WITH THE FIRM?

A. QSI Consulting, Inc. ("QSI") is a consulting firm specializing in regulated industries, econometric analysis and computer aided modeling. I currently serve as the firm's President.

Q. PLEASE PROVIDE A SYNOPSIS OF YOUR EDUCATIONAL BACKGROUND AND RELEVANT WORK EXPERIENCE.

A. Included with this testimony as Attachment 1 is a thorough description of my educational background and relevant work experience. In brief, in the past 10 years I have been employed by three separate state utility commissions (Missouri, Illinois and Maryland), most recently serving as the Director of Telecommunications for the Maryland Public Service Commission and before that, as Senior Policy Analyst for the Illinois Commerce Commission (Office of Policy and Planning). My experience with each of these state commissions included substantive analysis of federal and state administrative rules and law governing the relationship between incumbent local exchange carriers ("ILECs") and new-entrant, competitive carriers. In addition, I have substantial experience with issues surrounding unbundled network elements ("UNEs") and their role in facilitating competition in the local exchange marketplace. Likewise, as a consultant for the past 7

years, I have represented competitive carriers, citizen groups, equipment manufacturers, state commissions and a host of other entities with respect to numerous telecommunications issues. Much of my experience with QSI's clients has involved direct implementation of the Federal Telecommunications Act of 1996 (hereafter "TA96" or "the Act"), the Federal Communications Commission's ("FCC's") rules further implementing the Act's pro-competitive objectives, and a number of individual state requirements aimed at fostering competition in the local exchange marketplace.

Q. ARE YOU FAMILIAR WITH TELECOMMUNICATIONS COSTS GENERALLY AND WITH AMERITECH ILLINOIS' COSTS SPECIFICALLY?

A. Yes, I am. Over the past ten years I've had an opportunity to review telecommunications cost support submitted by every major local exchange carrier in the nation. I have provided expert testimony regarding telecommunications costs on more than 50 different occasions in 30 different states and before courts of varying jurisdiction. I began my review of SBC's costs when I first began my career at the Missouri Public Service Commission and have continued to review the costs of both SBC and Ameritech since that time. I participated in this Commission's very first Total Element Long Run Incremental Cost ("TELRIC") proceeding involving Ameritech Illinois' costs (Docket No. 96-0486) and in the related compliance docket (Docket No. 98-0396). For a more complete review of my telecommunications cost analysis experience, please see Attachment 1.

Q. ON WHOSE BEHALF WAS THIS TESTIMONY PREPARED?

A. This testimony was prepared on behalf of Payphone Services, Inc., DataNet Systems, LLC, TruComm Corporation and the Illinois Public Telecommunications Association (hereafter "Payphone Coalition").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I've been asked by my clients to review the cost study submitted by Ameritech Illinois in support of its proposed rates for "Basic COPTS Port" and "COPTS-Coin Line Port" rates (to be included in ILL C.C. No. 20, Part 19, Section 3). This testimony describes my review of Ameritech Illinois' cost study as well as my conclusions regarding its accuracy and reasonableness.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. While I don't take issue with the total investment and/or expense amount Ameritech Illinois claims will be required to provision an unbundled switch port capable of supporting the flexible automatic number identification ("FLEX-ANI") required by pay telephone providers, I am concerned by the overall cost methodology employed by Ameritech in recovering these costs. It seems clear that recovering the software upgrade investments identified by Ameritech Illinois, in the manner proposed in Dr. Currie's Testimony, will undoubtedly result in Ameritech Illinois double-recovering those expenses. Ameritech's own cost documentation makes clear that the monthly rate for a UNE port already includes all software related expenses and that no additive is required to fully compensate Ameritech for the software investment at issue in this proceeding. Therefore, the proper manner by which to allow Ameritech to recover its total FLEX-ANI costs from all demanding parties is to require those parties to purchase the UNE port

at its established rate, without additional additive. This will serve both to allow Ameritech to recover its investment, as well as to ensure that all ANI investments are recovered from the entirety of the demanding population (consistent with the FCC's UNE pricing rules).

II. BACKGROUND

Q. WHAT IS FLEX-ANI AND WHY DO PAY TELEPHONE PROVIDERS NEED IT?

A. Generally speaking, FLEX-ANI provides a local exchange carrier ("LEC") the ability to insert an additional set of pre-defined digits into the automatic number identification ("ANI") stream accompanying each call, thereby instructing the network of unique routing or rating instructions associated with the call. FLEX-ANI is not specific to pay telephone services, but instead, can be used for any number of current, or future, services that require special rating or routing instructions.[1] When used in support of pay telephone services, FLEX-ANI generates a pre-defined, two-digit identifier that allows an inter-exchange carrier ("IXC") to identify a call as originating from a pay telephone. Because the FCC's rules require IXCs to compensate pay telephone providers for toll free and access code calls originated from a pay telephone, FLEX-ANI services are required so that all interested parties can accurately identify pay telephone calls for proper compensation. FLEX-ANI is a service provided by the local exchange carrier ("LEC") to the pay telephone provider. The FCC provides a more specific explanation as follows:

[1] See Ameritech's response to Payphone Coalition data request No. 8 wherein Ameritech admits that FLEX-ANI capabilities used to support pay telephone services will also support certain outward WATS, cellular and private virtual network services.

20. FLEX ANI, which is a switch software feature, enables the transmission of a number of additional coding digits with a call that can, *inter alia*, uniquely identify a call as coming from a payphone. FLEX ANI codes are generated in end office databases and FLEX ANI is more flexible and easily modified to add additional coding digits than conventional ANI ii. When FLEX ANI codes are available, they are outpulsed with the call, instead of the embedded hardcoded ANI ii digits. FLEX ANI enables the assignment of more two digit codes (potentially 00-99) for payphones in addition to the "27" code already provided by ANI ii, including "29" for prison/inmate payphones and "70" for "smart" payphones. FLEX ANI is deemed flexible because new codes can be added to each end office database with the installation of new switch software. FLEX ANI is not available on non-equal access switches, but is resident on many equal access switches where it must be activated ("turned on") as a software capability. FLEX ANI requires a one time switch implementation per end office and associated trunk translations for each IXC, which ensure that the payphone-specific code will transfer thereafter with all calls from payphones. The major costs involved in implementing FLEX ANI are the initial generic software upgrades if necessary, activating the software, and provisioning end office trunks to provide the service to each IXC. Using FLEX ANI, IXCs can identify the call as a payphone call for call tracking, pay per-call compensation for the call, bill for the call based on the information provided with the call, and block the completion of the call if requested by the customer. By arrangement with their serving LECs, however, IXCs must condition their trunks to receive FLEX ANI.[2]

Q. PLEASE DESCRIBE THE HISTORY OF FLEX-ANI?

A. As described above, FLEX-ANI became a critical network functionality following the FCC's decision requiring that "dial-around compensation" be paid for toll free and access code calls made from payphones to IXCs who otherwise did not have a contractual relationship with the payphone provider. Before the FCC's dial-around compensation rules, a caller could use a pay telephone to make a toll free call (e.g., 1-800-xxx-xxxx) or a long distance access call (i.e., 950-xxxx or 10XXX), yet the pay telephone provider was generally prohibited from collecting a fee either from the caller or from the IXC who

[2] *Memorandum Opinion and Order*, CC Docket No. 96-128, released March 9, 1998 (hereafter *FLEX-ANI*

owned the 1-800 number to which the call was made. After the FCC's dial-around compensation rules were enacted, IXCs were required to pay a "per-call" fee to the payphone provider for each toll free and access code call received from the payphone provider's equipment. In order to implement this rule, incumbent local exchange carriers ("ILECs") were required to upgrade their switching systems such that all calls originated from a pay telephone must generate, within the signaling stream accompanying each call, a two-digit code that would identify that call as having originated from a pay telephone. The FCC ultimately decided that the most effective method for accomplishing this two-digit identifier was the implementation of switching software capable of supporting functionality generally referred to as "FLEX-ANI" (as defined above).

Q. HOW WERE COSTS FOR FLEX-ANI TO BE RECOVERED?

A. The FCC allowed each ILEC incurring expenses associated with accommodating FLEX-ANI capabilities within its network, to file an interstate access service rate element capable of recovering its implementation expenses. Those rates were to be charged by the ILEC to its pay telephone access line subscribers, who were then to recover the expenses directly from the IXCs via the dial-around compensation mechanism.

Q. DID AMERITECH RECOVER FLEX-ANI EXPENSES VIA AN INTERSTATE ACCESS SERVICE RATE ELEMENT?

A. Yes it did. Between June 1998 and July 2000 Ameritech charged each independent pay telephone service customer within its region a rate equal to $1.22 per month, per line in an effort to recover its expenses associated with implementing FLEX-ANI capabilities

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Order), ¶20, footnotes omitted.

throughout its network.[3] Ameritech recovered a total of **$ ** in FLEX-ANI related costs during this period.[4] Ameritech's recovery during this period was sufficient to recoup the entirety of its FLEX-ANI investments and hence, on June 8, 2000 (via transmittal 1237) Ameritech removed from its interstate tariff its $1.22 per month FLEX-ANI recovery charge.

In a nutshell, consistent with the FCC's orders, the "cost of implementing FLEX ANI to transmit payphone-specific coding digits must be spread across all payphones served by Ameritech." (March 9, 1998 Memorandum Opinion and Order, CC Dkt. 96-128, fn. 124.)

Q. IF AMERITECH HAS ALREADY RECOVERED THE ENTIRETY OF ITS FLEX-ANI COSTS FROM PAYPHONE PROVIDERS, WHY IS IT PROPOSING TO RECOVER ADDITIONAL FLEX-ANI COSTS IN THE PRICE OF A COPTS AND COPTS-COIN UNE PORT?

A. According to the testimony of Mr. Kirksey and Dr. Currie, the additional costs included within Ameritech's proposed COPTs and COPTs-Coin port rate is not intended to recover costs associated with implementing FLEX-ANI generally, but is instead intended to recover costs associated with a specific software "patch" that Ameritech Illinois must purchase for its Lucent switches if it chooses to use its FLEX-ANI capabilities from an unbundled port within a UNE-Platform ("UNE-P") scenario. This, according to Ameritech, results from the fact that Ameritech has chosen to provide the unbundled local transport ("ULT") component of UNE-P, using its AIN ("Advanced Intelligent

[3] See Ameritech response to IPTA Data Request No. 7f including FCC Transmittal Number 1159.

Network") platform through the use of AIN triggers. Apparently, the AIN triggers Ameritech uses to support UNE-P conflict (within its Lucent switches) with the FLEX-ANI triggers needed to ensure that the proper two-digit payphone-specific ANI code is properly passed within the ANI stream. As such, Ameritech purchased, from Lucent, a software "patch" that would solve the problem. Likewise, Ameritech Illinois was required to upload this software onto the entirety of its embedded Lucent switching platform so as to ensure that FLEX-ANI capabilities continued to function properly.

II. AMERITECH'S FLEX-ANI COST STUDY

Q. HAVE YOU REVIEWED AMERITECH ILLINOIS' COST STUDY SUPPORTING ITS COPTS AND COPTS-COIN UNE PORT RATES?

A. Yes, I have. I have also propounded substantial discovery and reviewed in detail Ameritech's responses in an attempt to determine the accuracy and reasonableness of Ameritech Illinois' cost study.

Q. PLEASE EXPLAIN ANY CONCERNS YOU HAVE WITH AMERITECH'S COST STUDY.

A. I have four primary concerns regarding Ameritech Illinois' cost study and the UNE rates it supports:

1. Ameritech Illinois' cost study is a marginal cost study, not a Total Element, Long Run Incremental Cost study consistent with the FCC's requirements for establishing UNE rates, as such, it is an inappropriate basis upon which to set UNE rates,

2. Allowing Ameritech to recover its software "patch" costs in a separate, stand-alone rate additive would result in double recovery. Ameritech already recovers the costs of all switching software (both generic

[4] *Id.*

upgrades and individual "patches" and supplements) either in its direct switch-port investment, or through the maintenance factor included within its annual charge factor.

3. While Ameritech's cost study assumes, inherently, that its investment in Lucent software necessary to "patch" the problem, is incremental to FLEX-ANI services required by UNE-P customers (and hence should be recovered from UNE-P customer's requesting FLEX-ANI), the validity of this assumption isn't at all clear. Indeed, FLEX-ANI was working perfectly (at a cost of approximately **$ ** to pay telephone subscribers) before Ameritech chose to provision its UNE-P product using an AIN platform. In real terms, it is more appropriate to assume that UNE-P line ports ,generally, caused FLEX-ANI to malfunction, and as such, UNE-P ports in general should bear the costs of fixing the problem.

4. Ameritech Illinois intends to add substantial shared and common costs onto the costs it believes are directly attributable to FLEX-ANI capabilities made possible by its Lucent software "patch." In describing the manner by which ILECs could recover FLEX-ANI related costs from private payphone providers, the FCC specifically precluded ILECs from including shared and common costs in their recovery mechanism.[5]

Q. WHY DO YOU SUGGEST THAT AMERITECH'S COST STUDY IS A MARGINAL STUDY INSTEAD OF A MORE APPROPRIATE TELRIC ANALYSIS?

A. Rather than using the TELRIC methodology adopted by the ICC as the proper method for pricing UNEs in Illinois, Ameritech in this case utilizes a marginal cost analysis. This results from the fact that Ameritech attempts to recover costs for fixing a specific problem impacting only a small number of FLEX-ANI customers, and likewise, attempts to recover those costs from less than the total FLEX-ANI user-base. The more appropriate analysis would look to "total" FLEX-ANI related costs (or even more appropriately, total costs for all port-related functionality), and then recover those costs from all customer's using that functionality.

[5] *FLEX-ANI Order*, ¶40.

Q. PLEASE DESCRIBE THE AMERITECH COST STUDY AT ISSUE IN THIS PROCEEDING.

A. In simplest terms, Ameritech's cost study aggregates the investment it was required to make in the Lucent Software "patch" in order to allow its Lucent central offices to properly recognize FLEX-ANI digits (**$ **). Ameritech then calculates the yearly financial impact of this one time investment by applying an annual charge factor ("ACF") to the original investment, thereby generating the yearly expense associated with its original one-time investment. Ameritech Illinois then divides this yearly expense by the estimated number of UNE-P COPT ports it believes it will be required to provide to competitors, based upon current demand (** **). The resulting figure is then divided by 12 to arrive at a monthly rate that can be applied to each port for purposes of recovering its investment. After developing a per port cost, Ameritech Illinois proposes to add its substantial shared and common cost allocator to its direct FLEX-ANI costs and then add that product to its existing analog switch port rates. The following table provides the actual calculations used to arrive at Ameritech Illinois' proposed rates:

****Ameritech Illinois considers information in this table to be "confidential"****

Q. PLEASE EXPLAIN FURTHER YOUR OPINION THAT AMERITECH ILLINOIS' COST STUDY IS A MARGINAL COST STUDY, NOT A TELRIC STUDY.

A. Each cost study should begin with a question that provides the cost analyst the scope by which to measure the costs in question. While this might sound somewhat esoteric, the importance of this first step is crucial in ensuring that the proper result is reached (i.e., a TELRIC cost). From that question, it is easy to discern the extent to which the cost study appropriately measures the "total demand" for a network element, or, mistakenly measures some smaller, more marginal increment. It is clear that the question guiding Ameritech Illinois' cost study in this proceeding is as follows:

> "What additional costs will Ameritech Illinois incur to solve the problem prohibiting it from providing FLEX-ANI capabilities to UNE switch ports used in a UNE-P combination when those switch ports are served by Lucent central office switches?"

Obviously, this question, because it focuses on only a very small component of the "total demand" for FLEX-ANI capabilities, leads Ameritech Illinois to structure its cost study inappropriately, ultimately leading to the wrong answer (i.e., a "marginal cost" as opposed to the more appropriate "total element incremental cost"). In effect, Ameritech is assuming that everything it needs to provision FLEX-ANI capabilities to UNE-P ports exists, except for the Lucent Software Patch needed to solve this particular problem. This is by definition a "marginal" cost study, measuring the marginal costs of providing FLEX-ANI capabilities to a subset of the "total demand." Obviously, a proper TELRIC study measures the costs of providing the total demand for the entire network element,

assuming no previously established technology nor any established network (other than the location of the existing wire centers).

Q. PLEASE EXPLAIN THE SIGNIFICANCE OF THIS MISTAKE FURTHER?

A. First, it is important to define the "network element" for which the analyst will attempt to measure costs. In this case, the network element is the capability to pass pre-defined digits from a switch port assigned to a pay telephone station, to an IXC who will ultimately terminate the call (for purposes of ensuring proper dial-around compensation). This network functionality, or "network element," is the proper basis for a TELRIC study. The network element in question is NOT the ability to overcome an individual problem generated by Ameritech Illinois' choice to burden its unbundled local transport service (when provided with a *UNE-P* combination) with *AIN functionality that* generates problems in its Lucent switching centers. This distinction is important because it impacts the proper question that should focus the Ameritech Illinois study, and as a result, impacts the proper, nondiscriminatory manner by which these costs should be recovered.

Q. WHAT QUESTION SHOULD HAVE AMERITECH ILLINOIS' COST ANALYSTS ASKED THEMSELVES FOR PURPOSES OF FRAMING A PROPER TELRIC STUDY?

A. The following question is more proper:

> "What investments and related expenses would be required to allow all switch ports requiring two-digit, ANI identification, to provide those pre-defined digits to IXCs (i.e., to allow for proper dial-around compensation)?"

Obviously, this question is more universal and tasks the cost analyst with reviewing the costs associated with providing access to pre-defined ANI digits to all parties demanding their use (including Ameritech's own payphones). By definition, this "total demand" approach is the only approach consistent with the FCC's TELRIC methodology.

Q. EVEN IF YOU'RE RIGHT, HOW DOES YOUR DISCUSSION ABOVE IMPACT THE PROPER MANNER BY WHICH AMERITECH ILLINOIS SHOULD RECOVER ITS FLEX-ANI COSTS?

A. As described in the "Background" section of my testimony above, ANI digits used to inform IXCs that calls are originating from pay station apparatus are required not only by private payphone providers who may, or may not, be relying upon an access line served by UNE-P, but also by Ameritech Illinois itself in support of its tens of thousands of public pay stations. Further, as described above, Ameritech has undergone an inappropriate, segmented approach to making these ANI capabilities available and in recovering its related investments. In doing so, it has inappropriately advantaged its own pay telephone business by shielding that business from any ANI related costs. For example:

- it appears that by purchasing generic switch upgrades for its central office switches in the early 1990s, Ameritech inherently provided itself the capability, from its own "coin line" public paystations, to pass the proper ANI digits necessary to inform IXCs that a given call originated from a paystation (what the FCC refers to as ANI *ii*).

- Likewise, after being required by the FCC, beginning in 1997, Ameritech upgraded its central offices to allow private payphone providers similar functionality by utilizing a COPTS (as opposed to a "coin") line equipped with FLEX-ANI capabilities. Ameritech recovered this substantial investment directly from pay telephone providers via a monthly surcharge assessed per each private pay station.

- Now, in this proceeding, Ameritech is again attempting to recover ANI-related costs associated with a particular problem resulting from the manner by which it has chosen to provide UNE-P and the resultant inability for UNE-P ports to adequately pass the FLEX-ANI digits for which payphone providers previously invested.

As I described above, this segmented approach is inappropriate when compared with the FCC's TELRIC methodology, and as a result, cannot be used to support UNE rates. And, perhaps most importantly, as described later, this approach allows Ameritech to double recover FLEX-ANI related costs.

Q. HOW SHOULD A STUDY BE DONE?

A. In simplest terms, Ameritech is required by the Illinois Commission to rely upon a proper TELRIC study in establishing rates for UNEs. Consistent with this mandate, Ameritech Illinois should have calculated its total investment in switch related features (including ANI), and then recovered those total investments by its total demand for those functionalities. This would have required Ameritech Illinois to aggregate (1) its investment in the generic switch upgrades that supported its ability to provide ANI capabilities for its own paystations, (2) the investment necessary to make FLEX-ANI available to private payphone providers (not relying upon UNE-P), and then also (3) these investments meant to remedy the problem specific to UNE-P payphone lines (i.e., the Lucent software "patch"). This total investment should then have been recovered as part of the cost-recovery process for all port-related functions as it certainly must be considered part of the "full functionality" of the switch port-UNE. This is consistent with the Commission's past decisions regarding proper cost recovery for switch related functionalities and features and is the only manner by which to conduct a proper TELRIC analysis.

Q. THAT MAY ALL BE WELL AND GOOD, BUT HOW CAN THE COMMISSION, IN THIS PROCEEDING, REMEDY THE SEGMENTED APPROACH TO ANI COST RECOVERY THAT AMERITECH HAS APPARENTLY EXERCISED OVER A NUMBER OF YEARS?

A. As I explain below, in simplest terms, purchasers of a UNE-P switch port will already be helping to recover the investments in the ANI *ii* software utilized by Ameritech for its own public payphones, as well as for the FLEX-ANI upgrades recovered from private payphone providers in the past. As such, UNE-P port purchasers are already contributing to the recovery of "total investment" for ANI capabilities inherent in the switch port (along with Ameritech and private payphone providers who purchase COPT access lines). Said another way, proper recovery of past ANI capabilities has taken place, by spreading those costs across all port users. As such, when additional functionality is required to supplement these same ANI capabilities (such as the software "patch" at issue in this proceeding), or any other switch-related feature, all users of these port capabilities should contribute to the recovery of this investment as well. Specifically, investment in the software patch should be recovered from all subscribers who use it (including Ameritech's own pay telephone unit), not just those served via UNE-P.

Q. PLEASE EXPLAIN FURTHER YOUR CONTENTION THAT PARTIES PURCHASING UNE-P PORTS ALREADY HELP TO RECOVER THE COSTS ASSOCIATED WITH AMERITECH'S USE OF ANI BY ITS PAYPHONES, AND FOR THE FLEX-ANI UPGRADES MADE BY AMERITECH IN 1997.

A. When Ameritech Illinois employs generic software upgrades, purchases generic software necessary for a switch's primary function, or purchases software specific to individual switch features, those upgrades (and their related investments) are accounted for in the per port costs attributed to an unbundled port. This is especially true in Illinois where the Commission has determined that a single monthly, per port rate is all that is required to compensate Ameritech for all features and functions of the switch, including usage.[6] Because all switching software investment is aggregated and accounted for in the monthly UNE port rate, when UNE-P subscribers purchase the UNE port, they are contributing to the recovery of all Ameritech switching software, even the generic software used exclusively by Ameritech to provide ANI *ii* digits to IXCs from its pay telephones. Likewise, when Ameritech purchases additional software (such as that required to support the FLEX-ANI requirements mandated by the FCC in 1997), unless otherwise removed, those costs are likewise accounted for in the monthly, UNE port rate. This allows for proper recovery of all switch-related features, from all parties who rely upon the switch and is a proper TELRIC-based cost recovery mechanism.

Q. WHEREIN THEN LIES THE PROBLEM?

A. The problem exists when Ameritech attempts to recover software upgrades both within the monthly rate for the UNE port, as well as by some additional mechanism (like the UNE port additive at issue in this case), thereby double recovering its expenses. That is the situation that exists in this proceeding.

[6] See the Commission's *Second Interim Opinion and Order* in Docket No. 96-0486 and, generally, the *Hearing Examiner's Proposed Order* in Docket No. 00-0700 wherein all switch related costs (including usage) are accounted for in the monthly, unbundled port rate.

Q. IF GENERAL ANALOG LINE-PORT USERS AREN'T LIKELY TO AVAIL THEMSELVES OF THE FLEX-ANI CAPABILITIES ENABLED BY THIS SOFTWARE PURCHASE, WHY SHOULD THEY BEAR ANY OF THE COSTS?

A. Software costs necessary to enable the switch to function in a fully featured manner are largely shared costs of the switch. This is especially true when the software is meant to "fix" compatibility issues arising between different features (because identifying the feature that "causes" the problem is directly dependent upon the timing of when each feature is enabled). As such, it is most economically reasonable to recover the entirety of the switch's software from all users of the switch. An example best highlights this point and shows how the Commission has always required Ameritech to follow this method of cost recovery and should continue to do so in this proceeding. Pay telephone providers do not (indeed almost cannot) use call forwarding, three-way calling or a myriad of other features provided to and used extensively by other basic analog line port users. Yet, pay telephone providers when they buy a basic analog line port (which the Payphone Coalition has agreed to do), pay a portion of the software costs necessary to enable these features within the switch, those costs are simply aggregated and recovered from the monthly analog line port rate.

Q. IF AMERITECH DIDN'T PURCHASE THE LUCENT "PATCH" SOFTWARE UNTIL 2001, HOW CAN A UNE PORT RATE SET IN 1997 (OR MORE RECENTLY IN 2002 IN DOCKET NO. 00-0700) PROPERLY RECOVER THOSE INVESTMENTS ABSENT SOME ADDITIONAL MECHANISM?

A. An example best answers this question. There are basically two types of software purchases Ameritech makes in installing a switch, and then in maintaining that switch for

purposes of providing the most modern service available. The original software purchases are generally referred to as "generic" software uploads (or upgrades) that provide the vast majority of the switch's primary processing power and capabilities. These software generics are generally provided with a switch when it is installed, or can be upgraded later if substantial progress is made in features and functionality following the switch's initial installation. These fundamental software packages are generally capitalized and considered a part of the original switch investment. As I discussed earlier, within Ameritech's TELRIC cost models, the investments made in this type of software are considered "direct costs" and are recovered in the monthly UNE port rate.

There are also more minor upgrades, patches and additional feature options that become available to provide additional features or services from the switch (or solve problems in the original software). These additional software packages are purchased from time to time (several per year) and are considered expenses associated with maintaining the switch. As such, Ameritech aggregates its expenses associated with these switch upgrades and recovers those costs via the "maintenance factor" that it applies to switching investment in an effort to arrive at a monthly switch port cost. Again, these expenses are also recovered in the monthly analog line port rate that my clients have agreed to pay.

Q. PLEASE EXPLAIN AMERITECH'S MAINTENANCE FACTOR AND DESCRIBE HOW IT IS USED TO RECOVER MAINTENANCE RELATED EXPENSES.

A. A maintenance factor is, at its simplest level, a relationship between historical maintenance expenses incurred to maintain a given level of asset investment. The purpose of the maintenance factor is to estimate maintenance expenses within a cost model used to develop "forward looking" investments for which booked maintenance expenses will not yet have been calculated. By applying the maintenance factor, the ILEC is, in essence, assuming that it will incur a level of maintenance expense with new investment similar to that it incurred in maintaining past investment.

The "maintenance factor" for switching equipment is generally calculated by dividing the total expense incurred in a given year associated not only with miscellaneous software upgrades, but also general expenses associated with maintaining the equipment itself (e.g., costs associated with faulty components, rearranging equipment for more efficient use, etc.). That total expense amount is then divided by the total investment in switching equipment for purposes of developing a ratio of "total maintenance expenses" to "total switching investment." This ratio is the "switching maintenance factor" used within Ameritech cost studies to estimate future maintenance expense, based upon projected switching investments. I've provided a simplistic example below:

DERIVING AN ACF; MAINTENANCE FACTOR DEVELOPMENT
An Example using ficticious values

General Equation
Total Maintenance Expense / Total Investment
= Maintenenace Component of the ACF

Example:

TOTAL MAINTENANCE EXPENSE	$16,579,242.00
Digital Switching - FRC 377c	
USOA Acct. 6212.1	
Description:	
This account shall include expenses associated with digital electronic switching (FCC Rules, Part 32).	
TOTAL INVESTMENT	$342,057,109.00
Digital Switching	
USOA Acct. 2212	Expense / Investment Maintenance Component
Description:	
This account shall include the original cost of stored program control digital switches and their associated equipment. Included in this account are digital switches which utilize either dedicated or non-dedicated circuits. This account shall also include the cost of remote digital electronic switches. (FCC Rules Part 32)	0.0485
	Other Components
Cost of Capital	0.0642
Depreciation	0.0456
Taxes, etc.	0.0375
TOTAL 377C (Digital Switching) ACF:	0.1958

After Ameritech derives its ACF (including its maintenance component), Ameritech applies the ACF toward any forward looking switching investment identified within its cost models for purposes of generating yearly costs. It is these yearly costs that are combined to ultimately arrive at monthly costs, such as those attributed to the UNE port.

Q. PLEASE EXPLAIN HOW THE ACF ATTRIBUTES GENERAL SOFTWARE COSTS TOWARD THE UNE PORT.

A. Assume that Ameritech has identified $120 in direct investment associated with providing a UNE switch port. In an effort to arrive at a monthly cost associated with that switch port, Ameritech first applies its ACF specific to digital switching equipment (FRC 377c) to the investment amount in order to generate a yearly UNE port expense (using our example above, this would result in $23.50 per port, per year - $120 x 0.1953). Ameritech then divides this yearly cost by 12 to arrive at a monthly cost of $1.96 per

month, per port ($23.50 / 12). If, however, we assume that Ameritech did not incur any additional software expenses associated with maintaining its switch (and we assumed the entire maintenance component was comprised of additional software), we would arrive at a lower monthly rate using the following equation: ($120 x 0.1473[7]) / 12) = $1.47. In essence, this example indicates that approximately $0.50 per month, per every UNE port would be attributed to maintenance expenses, including miscellaneous software upgrades.

Q. YOU STILL HAVEN'T EXPLAINED HOW EXPENSES INCURRED IN 2001 CAN BE ADEQUATELY RECOVERED BY RATES SET IN 1997.

A. A TELRIC cost study by definition, projects the costs of a UNE into the future by establishing a rate based upon "long run" costs. The ACF calculation identified above is consistent with this approach, in that it establishes a ratio of maintenance expenses to total switch investment. There is no need to revisit this ratio every year (or even worse, after every purchase), as long as major cost trends don't disturb the underlying relationship between expense and investment. Indeed, that is the purpose of the ratio method used to derive ACFs, it is meant to accurately estimate costs well into the future. Said another way, even though Ameritech hadn't purchased its Lucent "Patch" software during the timeframe for which information was used to establish Ameritech Illinois switch port rate, it likely did buy similar miscellaneous software that was booked to its expense accounts and attributed to its TELRIC costs, ultimately used in setting the applicable rate. Again, it is the ratio of expense to investment that is important and that stays relatively constant over time. Absent such consistency, the Commission would be required to review and approve a cost study every time Ameritech purchased a piece of

[7] FRC 377C ACF without maintenance expenses included.

equipment or an additional software capability. Not only would this be inconsistent with the "long run" nature of a TELRIC study, it would be impractical.

Q. HOW CAN YOU BE SURE THAT AMERITECH ATTRIBUTES MISCELLANEOUS SOFTWARE UPGRADES (LIKE THOSE FOR THE LUCENT "PATCH") TO THE ACCOUNTS USED AS THE BASIS FOR ITS MAINTENANCE FACTORS (AS YOU'VE LISTED THEM ABOVE)?

A. First, Ameritech is required to do so by the FCC's Part 32 rules that define the expense and investment accounts to which expenditures must be booked. Ameritech has little flexibility with respect to where and how it books such expenses. Further, to remove any doubt, I asked Ameritech in discovery to identify the accounts to which the **$ ** in software expenses serving as the basis for its FLEX-ANI TELRIC study were booked. Ameritech identified account 6212.1 as the account to which the entirety of the expense was booked.[8] It is this same account that serves as the basis for Ameritech maintenance factor development within its FRC 377C ACF development (see example above). As such, unless Ameritech has in the past, specifically excluded this type of investment (i.e., miscellaneous software investment) from its accounts before calculating its maintenance factor (which it has not), then costs associated with this type of investment are already included in the monthly recurring analog line port rate.

Q. WHAT DOES ALL THIS MEAN?

A. It means that Ameritech's monthly UNE port rate already recovers all software related expenses, even those for the Lucent "patch" software for which Ameritech would prefer

[8] See Ameritech Response to Data Request No. 12.

to establish a stand alone rate additive in this proceeding. Earlier in my testimony I suggested that singling out UNE COPT and COIN port rates as the vehicle for recovering Ameritech's investment in Lucent "patch" software was improper from a methodological standpoint. I mentioned that recovering expenses in this manner, as proposed by Ameritech, failed to comply with the FCC's TELRIC methodology (because it neither measured costs, nor provided for cost recovery, consistent with the "total demand" for the network element in question). I likewise explained that proper cost recovery would identify the totality of investment and expense associated with providing the network element in question (i.e., ANI identification for payphone calls), and then recover those investments over all units demanding access to that element (including Ameritech's payphones, private payphone providers and UNE-P port purchasers serving pay stations). What I've described above is the extent to which my recommendation has already, to a large extent, been accounted for. That is, Ameritech recovered its first ANI *ii* investments from all UNE port purchasers (in that the generic switch upgrades were considered initial investments recovered via the UNE port) and that likewise, all software investments made to provide FLEX-ANI to private payphone providers in 1997, and UNE-P ports in 2001 (through the Lucent "patch"), are likewise included in the UNE port rate via the maintenance factor.[9] Simply put, the proper manner by which to allow Ameritech to recover its total FLEX-ANI costs from all demanding parties is to require those parties to purchase the UNE port at its established rate, without additional additive.

[9] Unfortunately, it appears that Ameritech has already double recovered its investments in FLEX-ANI software in that it was allowed to recover investments made for these software upgrades directly from private payphone providers without being required to remove from those investments the accounts used to develop ACFs which were ultimately used to develop UNE port rates. Nonetheless, because the FCC established the recovery mechanism for those investments, little can be done now other than recognize the double recovery on Ameritech's part and ensure that such double recovery doesn't happen again in this proceeding.

This will serve both to (1) allow Ameritech to recover its investment, and (2) ensure that all ANI investments are recovered from the entirety of the demanding population.

Q. WOULDN'T YOUR PROPOSAL SIMPLY RESULT IN ALL CARRIERS WHO PURCHASE UNE PORTS FUNDING THE FLEX-ANI NEEDS OF THE PAYPHONE INDUSTRY?

A. No, it would not. There are two important points to be made in this regard. First, the FLEX-ANI software installed by Ameritech and at issue in this proceeding supports more switching functions than those attributable simply to payphone services. The FLEX-ANI capabilities made possible by the software "patch" can outpulse any two digits between 00-99 for purposes of identifying different types of traffic. As such, to date, this capability is required to support not only payphone services, but also certain OUTWATS services, cellular services and virtual private network functions. Likewise, the ability to use FLEX-ANI for future services is somewhat unlimited. Simply put, FLEX-ANI is a fundamental tool Ameritech now has available on its switches that it can use to support numerous services and functions in the future. As such, it is appropriate that the costs of implementing the FLEX-ANI software "patch" be shared by all of those who would benefit from it, including the non-payphone specific features, i.e., all purchasers of unbundled (and bundled) line ports.

Second, this type of switch upgrade is no different than the other types of upgrades that Ameritech makes from time to time to reconcile software incompatibles or other feature insufficiencies. The simple fact that this particular incompatibility came to light when attempting to solve a problem specific to ANI digits used by payphone providers, does

not make this investment "incremental" to those payphone providers. This investment is made to enhance the full capabilities of the switch and to reconcile a software incompatibility that would needed to have been solved regardless of the demands of payphone providers. As such, recovering these investments via Ameritech's maintenance factor used to calculate the UNE port rate (and through the direct costs attributable to port rates generally) is a perfectly legitimate and economically rational approach. Indeed, this is the approach that Ameritech uses (and has used) to recover all other such software upgrades its makes to its switches (except for this single exception).

In addition, it is important to remember that the software incompatibility problem addressed in this proceeding by the two Lucent SFID software patches purchased by Ameritech is a problem with Ameritech's AIN platform it chooses to use to provide UNE-P. It is the AIN triggers used by Ameritech to provide UNE-P that cancel out the FLEX-ANI capabilities pay telephone providers paid Ameritech to implement from 1998 to 2000 (at a cost of approximately (**$ **) Hence, to suggest as Ameritech does, that these investments are "incremental" to ports used to provide pay telephone services, is no more legitimate than suggesting that the costs are incremental to the AIN platform used to support all UNE-P services.

Q. ABOVE YOU MENTIONED THAT AMERITECH'S PROPOSED RATE ADDITIVE WOULD ALLOW IT TO DOUBLE RECOVER ITS SOFTWARE INVESTMENT. PLEASE EXPLAIN.

A. As I described in my discussion of Ameritech's maintenance factor development, Ameritech's UNE port rate (either its existing rate or the rate ultimately adopted by the

Commission in Docket No. 00-0700) already includes expenses associated with miscellaneous software upgrades (as well as generic upgrades and software purchases of all kinds). Hence, unless Ameritech removes a certain software expense from its accounts before calculating either its direct investment or indirect maintenance expenses, it will undoubtedly double recover those expenses if allowed to establish a stand-alone rate additive consistent with those upgrades. Yet, that is exactly what Ameritech is requesting in this proceeding. Even though Ameritech has indicated in discovery that it has already booked expenses associated with these software "patches" to Account 6212.1 (the same account used to derive its maintenance expense factor), it requests that it be allowed to establish yet another mechanism to recover these same expenses directly (without removing them from its account for purposes of establishing maintenance expenses). Such an approach would result in double recovery

Q. HOW CAN THE COMMISSION ENSURE AMERITECH IS NOT ALLOWED TO DOUBLE RECOVER ITS EXPENSES IN THIS MANNER?

A. As I described above, the most appropriate method of recovering these costs is to recover them from the maintenance factor wherein all UNE port subscribers will pay some portion toward their recovery (just like they do today for the numerous other miscellaneous software upgrades that are made to ensure the switch continues to operate in an effective and modern manner). Hence, the Commission need only reject Ameritech's proposal to establish a FLEX-ANI additive to the COPTS and COIN ports and instead rely upon the stand-alone UNE port rate adopted in Docket No. 00-700 in order to best recover these expenses.

Q. YOU'VE MENTIONED ON SEVERAL OCCASSIONS THAT SOFTWARE UPGRADES LIKE THE LUCENT "PATCH" AT ISSUE IN THIS PROCEEDING ARE RELATIVELY COMMON. WHAT IS YOUR BASIS FOR THIS STATEMENT?

A. Obviously, today's switches are complex computer systems that from time to time require additional software necessary to solve existing software compatibility issues or to add new or enhance existing features. This is simply a logical result of managing a complex computer platform. However, to ensure the accuracy of this point, in discovery Ameritech was asked the following:

> *Data Request No. 10*
> *Please identify all SFIDs [secure feature] or similar switch upgrade software purchased by SBC/Ameritech since January 1, 2001. Your complete answer will include any upgrade (other than generic upgrades) that provided new features and functions for existing SBC/Ameritech switches. Do not limit those purchased only for Lucent switches, but instead, identify all such purchases.*

Notwithstanding the fact that Ameritech specifically ignored the request and provided only those upgrades purchased for its Lucent ESS switches, the response is still telling:

> *...Ameritech provides the requested information for the Lucent ESS switches:*
>
> *Other Lucent 5ESS Secure Features Purchased since 1-1-01 include:*
> *SF316, SF320, SF322*
>
> *In addition, the following Lucent 4ESS Features purchased since 1-1-01 include:*
> *Feature 587, Feature 584, Feature 583 and Feature 585.*

Just counting the software upgrades purchased for Ameritech Illinois' Lucent switches (ignoring the likely multiple other purchases made for the Nortel and Seimens switches), Ameritech has made at least 7 other miscellaneous switch upgrades since 1-1-01. Yet, though these upgrades undoubtedly impact the features and functions of its switches, Ameritech has made no filing to recover these investments directly through some type of

additive (either to its UNEs or to its retail services). The reason for this is that Ameritech already recovers these expenses in its UNE and retail rates via its maintenance factors as described above, just as it recovers its expenses for the Lucent "patch" software at issue in this proceeding.

Q. EARLIER IN YOUR TESTIMONY YOU DISCUSSED THE FACT THAT THE FCC HAD SPECIFICALLY PRECLUDED ILECS FROM RECOVERING SHARED AND COMMON COSTS WHEN RECOVERING FLEX-ANI INVESTMENTS. PLEASE ELABORATE.

A. The FCC included the following instructions with regard to the recovery of FLEX-ANI investments made by ILECs in response to its 1998 *FLEX-ANI Order*:

> 40. We also conclude that any LEC revising its tariffs pursuant to this Order should be authorized to recover no more than the incremental costs of implementing the requirement that they provide payphone-specific coding digits for payphone compensation. We conclude that it is reasonable to permit LECs to recover the costs they incur solely to come into compliance with this Order, but we see no reason to permit LECs to increase their rates above that level, or to shift any portion of their overhead costs to PSPs by including overhead loadings in the rate charged to PSPs. [footnotes omitted]

The apparent purpose for this restriction was the FCC's attempt to generate additional competition in the payphone marketplace and its opinion that loading shared and common costs onto FLEX-ANI rates would burden private payphone providers to an unreasonable extent. Likewise, it seems clear the FCC was attempting to recognize that by paying any FLEX-ANI recovery charge, private payphone providers were paying expenses their competitor ILECs would not incur given the fact that the ILECs could rely upon the inherent ANI *ii* features included in their switches' generic software. Both of these objectives remain important today and this Commission should embrace them in limiting the rates Ameritech Illinois can charge to recover FLEX-ANI investments. As

such, if the Commission decides that some additive is reasonable, it should, at a minimum, ensure that the additive is comprised only of direct costs, absent Ameritech's substantial shared and common cost markup.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.